

TECHNIQUE FOR APPROXIMATING FUNCTIONS BASED ON LAGRANGE POLYNOMIALS

Abstract Of The Disclosure

5 A technique for approximating output values of a function based on LaGrange polynomials is provided. Factorization of a LaGrange polynomial results in a simplified representation of the LaGrange polynomial. With this simplified representation, an output value of a function may be determined based on an input value comprising an input mantissa and an input exponent. Based on a first portion of the input mantissa, a
10 point value and at least one slope value are provided. Each of the at least one slope value is based on a LaGrange polynomial approximation of the function. Thereafter, the point value and the at least one slope value are combined with a second portion of the input mantissa to provide an output mantissa. Based on this technique, a single set of relatively simple hardware elements may be used to implement a variety of functions with high
15 precision.